

What is claimed is:

1. An acoustical smoke vent, comprising:
  - a curb assembly attachable to a structure
  - a single layer door assembly operably coupled to the curb assembly;
  - an automatically releasing latch to secure the single layer door assembly in a closed orientation and to open the single layer door assembly in response to detection of predetermined indicators of fire in the structure; and
  - wherein the acoustical smoke vent, when in the closed orientation achieves a sound transmission class of STC-45 or better.
2. The acoustical smoke vent as claimed in Claim 1, further comprising a labyrinthine seal interposed between the single layer door assembly and the curb assembly.
3. The acoustical smoke vent as claimed in Claim 2, the labyrinthine seal comprising a door portion and a curb portion.
4. The acoustical smoke vent as claimed in Claim 2, the labyrinthine seal comprising an elastomeric gasket, the door assembly comprising a door having a perimeter and the curb assembly having a rim, a first portion of the elastomeric gasket being disposed about the perimeter and a second portion of the elastomeric gasket being disposed about the rim.

5. The acoustical smoke vent as claimed in Claim 2, the labyrinthine seal comprising an elastomeric gasket, the door assembly comprising a door having a perimeter and the curb assembly having a rim, a first portion of the elastomeric gasket being disposed about the perimeter and a second portion of the elastomeric gasket being disposed about the rim, the door portion having two rows of elastomeric gasket on a hinge side thereof.

6. The acoustical smoke vent as claimed in Claim 2, the labyrinthine seal comprising an elastomeric gasket, the door assembly comprising a door having a perimeter and the curb assembly having a rim, a first portion of the elastomeric gasket being disposed about the perimeter and a second portion of the elastomeric gasket being disposed about the rim, the door portion having an inner portion and an outer portion.

7. The acoustical smoke vent as claimed in Claim 2, the labyrinthine seal comprising an elastomeric gasket, the door assembly comprising a door having a perimeter and the curb assembly having a rim, a first portion of the elastomeric gasket being disposed about the perimeter and a second portion of the elastomeric gasket being disposed about the rim, the door portion having an inner portion and an outer portion, the inner portion having two opposed surfaces, each said surface having peaks and troughs.

8. The acoustical smoke vent as claimed in Claim 2, the labyrinthine seal comprising an elastomeric gasket, the door assembly comprising a door having a perimeter and the curb assembly having a rim, a first portion of the elastomeric gasket being disposed about the perimeter and a second portion of the elastomeric gasket being disposed about the

rim, the door portion having an inner portion and an outer portion, the inner portion having two opposed surfaces, each said surface having peaks and troughs.

9. The acoustical smoke vent as claimed in Claim 2, the labyrinthine seal comprising an elastomeric gasket, the door assembly comprising a door having a perimeter and the curb assembly having a rim, a first portion of the elastomeric gasket being disposed about the perimeter and a second portion of the elastomeric gasket being disposed about the rim, the door portion having an inner portion and an outer portion, the outer portion having a cylindrical extension and being secured to the door.

10. The acoustical smoke vent as claimed in Claim 1, further comprising composite acoustic barrier material and insulation disposed within the door assembly and the curb assembly.

11. The acoustical smoke vent as claimed in Claim 1, further comprising an inner sheet material layer and an outer sheet material layer separated by an airspace.

12. The acoustical smoke vent as claimed in Claim 11 the inner sheet material layer and the outer sheet material layer being of unequal thickness.

13. The acoustical smoke vent as claimed in Claim 11 the inner sheet material layer and the outer sheet material layer being acoustically isolated from each other.

14. A method of acoustically insulating a smoke vent, the smoke vent comprising a single layer door assembly and a curb assembly, the single layer door assembly being shiftable between a closed position and an open position, the method comprising the steps of:

interposing a labyrinthine seal between the door assembly and the curb assembly; and

disposing composite acoustic barrier material and insulation within the door assembly and the curb assembly wherein the combination of the labyrinthine seal and composite acoustic barrier material and insulation acoustically insulate the smoke vent, when said door is in said closed position, to a level of STC-45 or better.

15. The method as claimed in Claim 14, further comprising the step of securing a first portion of elastomeric gasket to a perimeter of the door assembly and securing a second portion of elastomeric gasket to a rim of the curb assembly.

16. The method as claimed in Claim 15, further comprising the step of securing a double row of elastomeric gasket material on a hinge side of the door assembly.

17. The method as claimed in Claim 15, further comprising the step of securing a latch side elastomeric gasket to a latch side of the door assembly and forming the latch

side elastomeric gasket to have an inner portion and an outer portion, the inner portion having two opposed surfaces, each said surface having peaks and troughs.

18. The method as claimed in Claim 15, further comprising the step of securing a latch side elastomeric gasket to a latch side of the door assembly and forming the latch side elastomeric gasket to have an inner portion and an outer portion, the outer portion having a cylindrical extension and being secured to the door.

19. The method as claimed in Claim 14, further comprising the step of forming the door assembly and the curb assembly from an inner sheet material layer and an outer sheet material layer separated by an airspace.

20. The method as claimed in Claim 19, further comprising the step of forming the inner sheet material layer and the outer sheet material layer of unequal thickness.

21. The method as claimed in Claim 19, further comprising the step of acoustically isolating the inner sheet material layer and the outer sheet material layer from each other.

22. An acoustical smoke vent, comprising:  
a curb assembly attachable to a structure  
a single layer door assembly;

means for securing the single layer door assembly in a closed orientation and automatically releasing the single layer door assembly in response to detection of predetermined indicators of fire in the structure; and

means for acoustically insulating the smoke vent, when in the closed orientation to a sound transmission class rating of STC-45 or better.

23. The acoustical smoke vent as claimed in Claim 22, further comprising means for acoustically sealing between the curb assembly and the door assembly.

24. The acoustical smoke vent as claimed in Claim 22, further comprising means for acoustically sealing between the curb assembly and the door assembly and additional means for acoustically sealing around non-hinged edges of the curb assembly.

25. An acoustical smoke vent, comprising: /

a curb assembly attachable to a structure, the curb assembly comprising an inner layer, an outer layer, sound insulation and further comprising an opening perimeter ;

a door assembly operably coupled to the curb assembly, the door assembly comprising an inner layer, an outer layer, sound insulation and a door perimeter;

an automatically releasing device to secure the door assembly in a closed orientation and to open the door assembly in response to detection of predetermined indicators of smoke or fire in the structure; and

a labyrinthine seal comprising a door portion operably coupled to the door assembly and a curb portion operably coupled to the curb assembly, the door portion being in compressive contact with the opening perimeter when the door is closed and the curb portion being in compressive contact with the door perimeter when the door is closed.

26. The acoustical smoke vent as claimed in Claim 25, the labyrinthine seal comprising an elastomeric gasket.

27. The acoustical smoke vent as claimed in Claim 25, the door assembly having a hinge side, the labyrinthine seal comprising two rows of elastomeric gasket on the hinge side of the door assembly.

28. The acoustical smoke vent as claimed in Claim 25, the labyrinthine seal comprising an elastomeric gasket, the door portion having an inner portion and an outer portion, the inner portion having two opposed surfaces, each said surface having peaks and troughs.

29. The acoustical smoke vent as claimed in Claim 25, the labyrinthine seal comprising an elastomeric gasket, the door portion having an inner portion and an outer portion, the outer portion having a cylindrical extension and being secured to the door.

30. The acoustical smoke vent as claimed in Claim 25, further comprising a gutter, the gutter comprising composite acoustic barrier material and insulation disposed within.

31. The acoustical smoke vent as claimed in Claim 25, the inner layer comprising an inner sheet material layer and the outer layer comprising an outer sheet material layer, the inner sheet material layer and the outer sheet material layer being separated by an airspace.

32. The acoustical smoke vent as claimed in Claim 31 the inner sheet material layer and the outer sheet material layer being of unequal thickness.

33. The acoustical smoke vent as claimed in Claim 31 the inner sheet material layer and the outer sheet material layer being acoustically isolated from each other.